



GARY R. HERBERT  
Governor

GREGORY S. BELL  
Lieutenant Governor

# State of Utah

## DEPARTMENT OF NATURAL RESOURCES

MICHAEL R. STYLER  
Executive Director

### Division of Oil, Gas and Mining

JOHN R. BAZA  
Division Director

Outgoing

00070041

#3777

OK

March 23, 2011

Dave Shaver, Manager  
West Ridge Resources, Inc.  
P. O. Box 910  
East Carbon, Utah 84520-0910

Subject: Approval of Penta Creek Lease Modifications and Revised Permit Document, West Ridge Mine, C/007/0041, Task ID #3777

Dear Mr. Shaver:

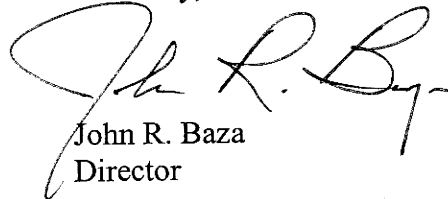
The Division has reviewed your application for addition of the Penta Creek Lease modifications, which also included a change in the permit boundary for the West Ridge mine. We received the clean copies on March 14, 2011. Enclosed is a stamped incorporated copy for insertion into your copy of the Mining and Reclamation Plan.

Also enclosed are two (2) copies of the revised permanent program permit for the West Ridge Mine.

Please have both permits signed by the designated signatory authority and return one signed original to the Division. You should note that the expiration date of the permit did not change but remains April 1, 2014.

If you have any questions, please call me at (801) 538-5334 or Daron Haddock at (801) 538-5325.

Sincerely,



John R. Baza  
Director

JRB/DRH/sqs

Enclosure

cc: Kenneth Walker, OSM  
Jeff McKenzie, BLM  
Larry Crist, USFWS w/o  
Marc Stilson, Water Rights w/o  
Dave Ariotti, DEQ w/o  
Chris Wood, DWR w/o  
Price Field Office

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**FEDERAL**

**C/007/0041**

**March 23, 2011**

**STATE OF UTAH  
DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF OIL, GAS AND MINING  
1594 West North Temple, Suite 1210  
Salt Lake City, Utah 84114-5801  
(801) 538-5340**

This permit, C/007/0041, is issued for the state of Utah by the Utah Division of Oil, Gas and Mining (Division) to:

**West Ridge Resources, Inc.  
P.O. Box 910  
East Carbon, Utah 84520-0910  
(435)888-4000**

for the West Ridge Mine. A Surety Bond is filed with the Division in the amount of \$2,184,000 payable to the State of Utah, Division of Oil, Gas and Mining and the Office of Surface Mining Reclamation and Enforcement (OSM). Coal mining and reclamation operations will be conducted on Federal Leases SL-068754-U-01215 and UTU-78562, State Leases ML 47711, ML 49287, ML 51744, BLM ROW UTU-77120 and UTU-87110, on State Special Use Lease #1163 and on Penta Creek fee lease. DOGM must receive a copy of this permit signed and dated by the permittee.

**Sec. 1 STATUTES AND REGULATIONS** - This permit is issued pursuant to the Utah Coal Mining and Reclamation Act of 1979, Utah Code Annotated (UCA) 40-10-1 et seq, hereafter referred to as the Act.

**Sec. 2 PERMIT AREA** - The permittee is authorized to conduct coal mining and reclamation operations on the following described lands within the permit area at the West Ridge Mine, situated in the state of Utah, Carbon and Emery Counties. The area under permit is 7316.62 acres and is delineated on U.S.G.S. 7 1/2 minute topographic maps as follows:

**Township 13 South, Range 13 East**

Section 34: NE1/4SE1/4, S1/2SE1/4;  
Section 35: All;  
Section 36: SW1/4, SW1/4NW1/4SW1/4NW1/4, S1/2S1/2NW1/4,  
S1/2SW1/4NE1/4, W1/2SE1/4, SE1/4SE1/4, S1/2NE1/4SE1/4,  
NW1/4NE1/4SE1/4.

**Township 14 South, Range 12 East**

Section 25: SE1/4SE1/4 (part thereof containing catchment structure E)

Township 14 South, Range 13 East

- Section 1: All;
- Section 2: All;
- Section 3: Lots 1-3, S1/2N1/2, S1/2;
- Section 10: All;
- Section 11: All;
- Section 12: All;
- Section 13: All;
- Section 14: E1/2, N1/2NW1/4, SE1/4NW1/4;
- Section 15: NE1/4NE1/4; portion of NW1/4SE1/4NE1/4 (security gate): portion of SE1/4SW1/4 (catchment structure A)
- Section 16: Portions of E1/2NE1/4SE1/4 (substitute topsoil area);
- Section 21: Portion of NE1/4SE1/4NE1/4 (pumping station)
- Section 24: N1/2SE1/4, N1/2, NE1/4SW1/4
- Section 28: NW1/4NW1/4 (catchment structure C)

Township 14 South, Range 14 East

- Section 6: Lots 3, 4, 5, 6 and 7, SE1/4NW1/4, E1/2SW1/4, W1/2SE1/4;
- Section 7: Lots 1, 3 and 4 SE1/4SW1/4, SW1/4NE1/4SW1/4; (Less and excepting from the portion of section 7, lot 1, those lands under and around Grassy Trail Dam and Reservoir owned by East Carbon City and Sunnyside City.
- Section 18: Lots 1, 2, 3, E1/2NW1/4.

This legal description is for the permit area of the West Ridge Mine and is shown on Map 5-2 (Surface Ownership Map) of the West Ridge Mine Mining and Reclamation Plan. The permittee is authorized to conduct coal mining and reclamation operations on the foregoing described property subject to the conditions of all applicable conditions, laws and regulations.

- Sec. 3 COMPLIANCE** - The permittee will comply with the terms and conditions of the permit, all applicable performance standards and requirements of the State Program.
- Sec. 4 PERMIT TERM** - This permit is effective on March 23, 2011 and expires on April 1, 2014.
- Sec. 5 ASSIGNMENT OF PERMIT RIGHTS** - The permit rights may not be transferred, assigned or sold without the approval of the Division Director. Transfer, assignment or sale of permit rights must be done in accordance with applicable regulations, including but not limited to 30 CFR 740.13{e} and R645-303-300.

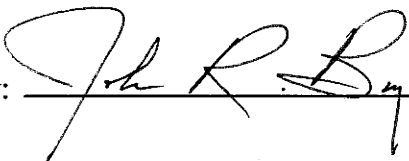
- Sec. 6 RIGHT OF ENTRY** - The permittee shall allow the authorized representative of the Division, including but not limited to inspectors, and representatives of the Office of Surface Mining Reclamation and Enforcement (OSM), without advance notice or a search warrant, upon presentation of appropriate credentials, and without delay to:
- (a) have the rights of entry provided for in 30 CFR 840.12, R645-400-220, 30 CFR 842.13 and R645-400-110;
  - (b) be accompanied by private persons for the purpose of conducting an inspection in accordance with R645-400-100 and R645-400-200 when the inspection is in response to an alleged violation reported to the Division by the private person.
- Sec. 7 SCOPE OF OPERATIONS** - The permittee shall conduct coal mining and reclamation operations only on those lands specifically designated as within the permit area on the maps submitted in the approved plan and approved for the term of the permit and which are subject to the performance bond.
- Sec. 8 ENVIRONMENTAL IMPACTS** - The permittee shall take all possible steps to minimize any adverse impact to the environment or public health and safety resulting from noncompliance with any term or condition of the permit, including, but not limited to:
- (a) any accelerated or additional monitoring necessary to determine the nature and extent of noncompliance and the results of the noncompliance;
  - (b) immediate implementation of measures necessary to comply; and
  - (c) warning, as soon as possible after learning of such noncompliance, any person whose health and safety is in imminent danger due to the noncompliance.
- Sec. 9 DISPOSAL OF POLLUTANTS** - The permittee shall dispose of solids, sludge, filter backwash or pollutants in the course of treatment or control of waters or emissions to the air in the manner required by the approved Utah State Program and the Federal Lands Program which prevents violation of any applicable state or federal law.
- Sec. 10 CONDUCT OF OPERATIONS** - The permittee shall conduct its operations:
- (a) in accordance with the terms of the permit to prevent significant, imminent environmental harm to the health and safety of the public; and
  - (b) utilizing methods specified as conditions of the permit by the Division in approving alternative methods of compliance with the performance standards of the Act, the approved Utah State Program and the Federal Lands Program.
- Sec. 11 EXISTING STRUCTURES** - As applicable, the permittee will comply with R645-301 and R645-302 for compliance, modification, or abandonment of existing structures.

- Sec. 12 RECLAMATION FEE PAYMENTS** - The operator shall pay all reclamation fees required by 30 CFR Part 870 for coal produced under the permit, for sale, transfer or use.
- Sec. 13 AUTHORIZED AGENT** - The permittee shall provide the names, addresses and telephone numbers of persons responsible for operations under the permit to whom notices and orders are to be delivered.
- Sec. 14 COMPLIANCE WITH OTHER LAWS** - The permittee shall comply with the provisions of the Water Pollution Control Act (33 USC 1151 et seq) and the Clean Air Act (42 USC 7401 et seq), UCA 26-11-1 et seq, and UCA 26-13-1 et seq.
- Sec. 15 PERMIT RENEWAL** - Upon expiration, this permit may be renewed for areas within the boundaries of the existing permit in accordance with the Act, the approved Utah State Program and the Federal Lands Program.
- Sec. 16 CULTURAL RESOURCES** - If during the course of mining operations, previously unidentified cultural resources are discovered, the permittee shall ensure that the site(s) is not disturbed and shall notify the Division. The Division, after coordination with OSM, shall inform the permittee of necessary actions required. The permittee shall implement the mitigation measures required by Division within the time frame specified by Division.
- Sec. 17 APPEALS** - The permittee shall have the right to appeal as provided for under R645-300-200.
- Sec. 18 SPECIAL CONDITIONS** - There are special conditions associated with this permitting action as described in attachment A.

The above conditions (Secs. 1-18) are also imposed upon the permittee's agents and employees. The failure or refusal of any of these persons to comply with these conditions shall be deemed a failure of the permittee to comply with the terms of this permit and the lease. The permittee shall require his agents, contractors and subcontractors involved in activities concerning this permit to include these conditions in the contracts between and among them.

These conditions may be revised or amended, in writing, by the mutual consent of the Division and the permittee at any time to adjust to changed conditions or to correct an oversight. The Division may amend these conditions at any time without the consent of the permittee in order to make them consistent with any federal or state statutes and any regulations.

**THE STATE OF UTAH**

By:   
Date: 3/24/2011

I certify that I have read, understand and accept the requirements of this permit and any special conditions attached.

\_\_\_\_\_  
**Authorized Representative of Permittee**

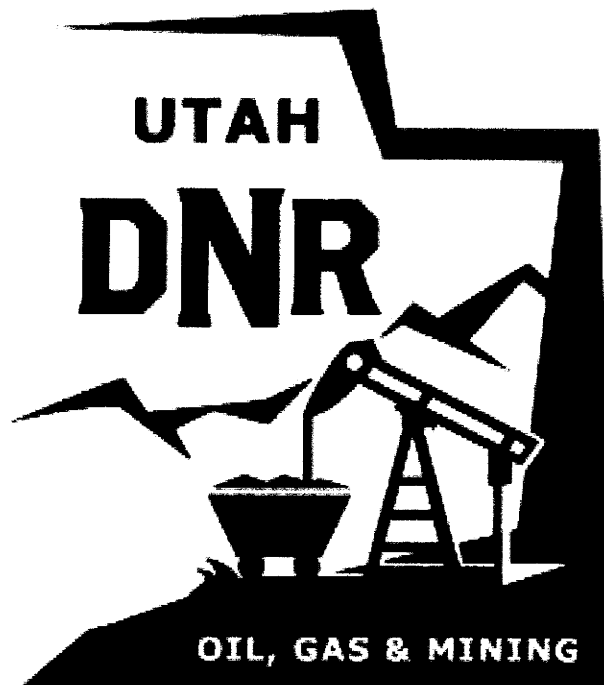
Date: \_\_\_\_\_

## Attachment A

### **SPECIAL CONDITIONS**

1. This permit specifically authorizes West Ridge Resources, Inc. to conduct an experimental practice in conjunction with their approved Coal Mining and Reclamation Operations at the West Ridge Mine, which allows for the protection of topsoil "IN-PLACE" rather than salvaging soil and stockpiling it for future reclamation. West Ridge Resources, Inc. will follow the plans as outlined in the approved Mining and Reclamation Plan, Chapter 2 and Appendix 2-6 and will be required to evaluate the effectiveness of the experimental practice on an annual basis. The Division will conduct annual reviews of the practice to ensure that it fully protects the environment and the public health and safety. In the event that the experimental practice is determined to be not as environmentally protective and would otherwise be required by standards promulgated under R645-301 and R645-302, revised reclamation plans which utilize standard reclamation technology will be required.
2. West Ridge Resources, Inc. will submit the required water quality data for the W Mine in an electronic format through the Electronic Data Input web site, <http://hlunix.hl.state.ut.us/cgi-bin/appx-ogm.cgi>.
3. Prior to undermining, the permittee must acquire and submit an addendum to SPUT -606 from the archeology consultant that clarifies the existence and location of cultural resource site 42CB-317.

# **State of Utah**



## **Coal Regulatory Program**

Penta Creek Fee Lease  
West Ridge Mine  
West Ridge Resources  
Technical Analysis  
March 23, 2011



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## TECHNICAL ANALYSIS DESCRIPTION

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### TECHNICAL ANALYSIS DESCRIPTION

On February 1, 2011 the Division received an application to include the longwall panels 18 through 20, north of Grassy Trail Reservoir in the permit area. This permit change involves increasing the permit area by 555.33 acres, an 8% increase. The expansion is located with the Penta Creek Lease, Federal Lease UTU-78562 and SITLA lease ML-51744. The BLM approved the R2P2 for mining in this longwall area on federal lease 78562. The area of proposed mining is located north and adjacent to the Grassy Trail Reservoir. The depth of cover in the expansion areas is considerable ranging from 2,000-3,000 feet. Due to the overburden depths, the Permittee proposes to utilize a panel/barrier longwall mining technique in order to maximize safety. The panel/barrier mining technique has been used previously at the West Ridge Mine in the north-western portions of the permit area in State Lease ML-47711 and Federal Lease UTU-78562. The panel/barrier mining that occurred in these areas produced significantly reduced amounts of subsidence.

The BLM approved mining this area after finding that it would have no adverse effect on the Grassy Trail dam structure or reservoir. Longwall mining of panels 18-20 would occur greater than 3000 feet away from the Grassy Trail dam and 2200 feet lower than the reservoir. Mining in this extension area will include panel-barrier design in order to reduce the intensity of mining-induced seismicity and subsidence.

The Division approved mining of longwall panel # 7 in 2005. This panel was closer to the reservoir and involved side-by-side panel design. The Division required several studies to monitor the impact of mining to the Grassy Trail dam and reservoir during and after mining. Mining of longwall panel # 7 was complete in 2006 and no adverse effects were detected.

This application is recommended for approval with one condition. Prior to undermining, the permittee must acquire and submit an addendum to SPUT -606 from the archeology consultant that clarifies the existence and location of cultural resource site 42CB-317. At which time, based on the nature and location of the site above the mine panels, the Division will make a determination if further inventory is and a protection plan is necessary.

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**SUMMARY OF FINDINGS**

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**SUMMARY OF FINDINGS**

The Division made the following findings during the review of the Penta Creek Fee Lease Permit Change application.

1. The permit change is not considered a significant permit revision in accordance with R645-303-226.
2. The permit change application identified the proposed change (an addition of the Penta Creek Lease to the permit area) and included information required under R645-301 and R645-302 to the extent applicable to the proposed change.
3. The present coal mining and reclamation operations are in compliance with the environmental protection standards of the Act and the Utah State Program (R645-303-233.120).
4. The requested amendment will not substantially jeopardize the operator's continuing ability to comply with the Act and the Utah State Program (R645-303-233.130).
5. The operator has provided evidence of having liability insurance (Federal Insurance Company #3710-95-30 (R645-303-233.140).
6. The operator has posted a reclamation surety in the required amount and has provided evidence that the surety will remain in full effect. (A surety issued by National Union Fire Insurance Company of Pittsburg, PA in the amount of \$2,117,000 (Bond Number 91-B-54926) (R645-303-233.150).
7. The operator has submitted all applicable, revised or updated information as required by the Division at this time. (R645-303-233.160).

## GENERAL CONTENTS

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# GENERAL CONTENTS

## IDENTIFICATION OF INTERESTS

Regulatory Reference: 30 CFR 773.22; 30 CFR 778.13; R645-301-112

### Analysis:

A revised Chapter 1 was submitted with the Penta Creek Fee Lease application. The revised chapter contains and Identification of Interests section on page 1-1. This section includes (as required by R645-301-112):

- A statement that West Ridge Resources (WRR) is a corporation
- The name, address, telephone number, and EIN of the Applicant and resident agent
- A statement that WRR will pay the abandoned mine land fee
- Each person who 'owns or controls' WRR

### Findings:

The information provided is considered adequate to meet the minimum regulatory requirements for this section.

## RIGHT OF ENTRY

Regulatory Reference: 30 CFR 778.15; R645-301-114

### Analysis:

Right of Entry information is located on page 1-5 and appendix 1-4 of chapter 1. The Penta Creek Fee Lease information is located on page 1-13 in table 1-4 of Chapter 1. The lease extension includes 212.5 acres from state lease ML 51744, 238.17 acres from the Penta Creek Fee lease and 272.38 acres in the Penta Creek Lease Extension. These three lease assignments are located in Appendices 1-4E, 1-4 F and 1-4 G respectively. None of the lease assignments are subject to litigation. The total permit boundary would be increased to 7316.62 acres upon Division approval of this amendment.

### Findings:

## **GENERAL CONTENTS**

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The information provided is considered adequate to meet the minimum regulatory requirements for this section.

### **LEGAL DESCRIPTION AND STATUS OF UNSUITABILITY CLAIMS**

Regulatory Reference: 30 CFR 778.16; 30 CFR 779.12(a); 30 CFR 779.24(a)(b)(c); R645-300-121.120; R645-301-112.800; R645-300-141; R645-301-115.

#### **Analysis:**

The permit area and proposed extension is not within an area designated as unsuitable for mining as stated on page 1-19 of the approved M&RP. West Ridge has also committed to not conduct mining operations within 100 feet of an occupied dwelling.

#### **Findings:**

The information provided is considered adequate to meet the minimum regulatory requirements for this section.

### **PERMIT TERM**

Regulatory References: 30 CFR 778.17; R645-301-116.

#### **Analysis:**

The permit term consists of five years. The permit was last renewed on April 1, 2009 and would expire on April 1, 2014 (see 2009/incoming/0018.pdf).

#### **Findings:**

The information provided is considered adequate to meet the minimum regulatory requirements for this section.

### **PUBLIC NOTICE AND COMMENT**

Regulatory References: 30 CFR 778.21; 30 CFR 773.13; R645-300-120; R645-301-117.200.

#### **Analysis:**

## GENERAL CONTENTS

March 23, 2011

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No public comment or proof of publication is required for this amendment. This amendment is not a new application for a permit, significant revision or renewal. An amendment must be classified as a significant revision if the permit change involves increasing the disturbed area by 15 percent, engaging in operations outside of the CHIA, engaging in operations in hydrologic basis other than those authorized in the approved permit, or continuing operations after cancellation of the liability insurance policy. This permit amendment does not involve any of the items listed under R645-303-220 for significant revision criteria.

The lease area included sensitive areas around Grassy Trail Dam and reservoir, therefore, the Division decided to seek comments and concerns from interested parties including the Division of Dam Safety, the City of Sunnyside, the Division of Water Rights, Carbon County, the BLM and East Carbon City. Only one comment was received during the comment period from Mr. Bret Dixon of the Division of Dam Safety (See 2011 incoming 03032011.3733.pdf). RB & G engineers looked into Mr. Dixon's concerns regarding peizometer #12 and successfully resolved the discrepancy (See 2011 incoming 03212011.pdf). As of March 21, 2011, East Carbon City is still working on updating the Emergency Action Plan.

### **Findings:**

The information provided is considered adequate to meet the minimum regulatory requirements for this section.

## **ENVIRONMENTAL RESOURCE INFORMATION**

Regulatory Reference: Pub. L 95-87 Sections 507(b), 508(a), and 516(b); 30 CFR 783., et. al.

### **HISTORIC AND ARCHEOLOGICAL RESOURCE INFORMATION**

Regulatory Reference: 30 CFR 783.12; R645-301-411.

#### **Analysis:**

The application contains Archeology map 4-2 and a narrative in cultural resource report SPUT-606 that describes known archeological sites within the permit and adjacent areas. There are no public parks, cemeteries, units of the National system of trails or the wild and scenic river system in the permit or adjacent area.

A class I cultural resource survey (SPUT-606) was conducted by John Senulis of Senco-Phenix Archeological Consultants on January 31, 2011. The file search was conducted at the Utah Division of State History website and at the Price River Field Office Bureau of Land Management. Most of the sites identified in the file search were not significant and were not located within the proposed lease expansion area. However, site 42CB-317 located within the SW/SW/SW of Section 6 was considered eligible pending re-examination by Senco-Phenix. The site consists of a series of nine historic house structures with associated outhouses, corrals and fences on the west side of Whitmore Creek. No eligibility recommendation was previously made. In a phone conversation with archeologist John Senulis on February 28, 2011, Mr. Senulis indicated that site 42CB-317 was first identified in the 1980's and may contain faulty information. Mr. Senulis has not been able to locate the site in the past and will be doing a more thorough search this spring. Mr. Senulis committed to providing the Division with an addendum to SPUT-606 with clarifying information on site 42CB-317. Additionally, Dave Shaver indicated that the site, if existing, would be located over a barrier panel and would not be impacted by undermining. The location and existence of this site will be verified this spring which will be prior to any undermining in the area.

#### **Findings:**

The information provided is considered adequate to meet the minimum regulatory requirements for this section. However, prior to undermining, the permittee must acquire and submit an addendum to SPUT -606 from the archeology consultant that clarifies the existence and location of cultural resource site 42CB-317.

## **VEGETATION RESOURCE INFORMATION**

Regulatory Reference: 30 CFR 783.19; R645-301-320.

### **Analysis:**

The Penta Creek Fee lease permit expansion is not expected to include any surface impacts to vegetation. Subsidence impacts should be minimal due to the type of mining and amount of overburden. No mining under perennial streams is proposed, so impacts to riparian vegetation will not occur. Map 3-1 has been updated for this application to include the general vegetation communities located within the permit expansion area. The general vegetation communities within the expansion area include mountain brush/sagebrush, aspen, sagebrush/grass/herbland, and douglas fir.

### **Findings:**

The information provided is considered adequate to meet the minimum regulatory requirements for this section.

## **FISH AND WILDLIFE RESOURCE INFORMATION**

Regulatory Reference: 30 CFR 784.21; R645-301-322.

### **Analysis:**

The penta creek permit expansion is not expected to include any surface disturbances. Maps 3-4B, C, and D were updated to include general Deer, Elk and Antelope habitat, respectively, in the permit expansion area. The permittee is not required to submit site specific resource information on the expansion area because it does not include listed or proposed endangered or threatened species or habitat of unusually high value that will be affected by mining.

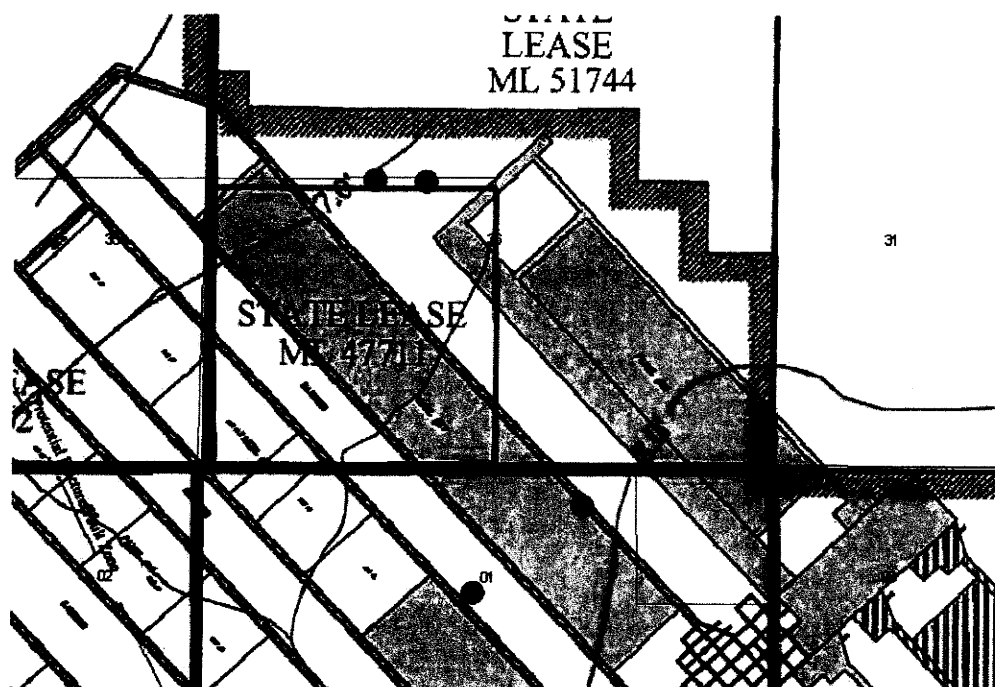
A raptor survey is included in this submittal in the confidential section. The survey was conducted in May of 2010 and included the lease expansion area. No surface impacts are expected from undermining the lease expansion area due to the depth and type of mining. However, no nests were identified in the lease expansion area. Two nests were identified in the State Lease ML 47711 which contains one panel and barrier system that will be mined in 2011. The map labels the two nests as 1935, and 1934. Nest 1934 was not listed on the associated information table. The Division receives the inventory information every year from consultants, so the information was researched in house and not with the provided information. Nest 1934 and 1935 were both inactive in 2010. Two nests were also located in section 1, part of which will be undermined in 2011. The image below was produced by the Division and shows the nests



**ENVIRONMENTAL RESOURCES INFORMATION**

March 23, 2011

(green dots) in relation to the mining panels (yellow sections). No nests are located directly above the panels.

**Findings:**

The information provided is considered adequate to meet the minimum regulatory requirements for this section.

**LAND-USE RESOURCE INFORMATION**

Regulatory Reference: 30 CFR 783.22; R645-301-411.

**Analysis:**

The proposed expansion is not expected to include any surface disturbances. Map 4-1 was updated to include the land uses located on the expansion area. These uses will not be impacted by mining.

**Findings:**

The information provided is considered adequate to meet the minimum regulatory requirements for this section.

## HYDROLOGIC RESOURCE INFORMATION

Regulatory Reference: 30 CFR Sec. 701.5, 784.14; R645-100-200, -301-724.

### Analysis:

#### Baseline Information

The application meets the baseline information requirements of the State of Utah R645-Coal Mining Rules.

The previous technical analysis (Task ID #3733) identified a deficiency relative to baseline data for the Right Fork of Whitmore Canyon. The previous amendment did not contain any baseline information for that drainage. The Permittee was directed to provide sufficient baseline information that characterizes the Right Fork of Whitmore Canyon.

The Permittee provides baseline data for the Right Fork of Whitmore Canyon in Appendix 7-14, *Grassy Trail Reservoir Right Fork Historical Flow Data*. The data was obtained from multiple sources including; Leon Pressett, Former East Carbon City Water Master, M. Page & R. Wilde- Division of Water Rights, Dana Marrelli, Utah American Energy and Warren Monroe, Jones and DeMille Engineering, Inc. The data ranges from 1962 to the present. Dana Marelli from Utah American Energy obtained flow data on the Right Fork of Whitmore Canyon for the 3<sup>rd</sup> and 4<sup>th</sup> quarters of 2010.

The previous technical analysis had identified a deficiency relative to the 1999 spring and seep survey that was conducted in the proposed expansion area. The Permittee was directed to provide the complete November 1999 spring and seep inventory report presented in Appendix 7-6A (including all maps and figures cited in the report). Upon review of the previously submitted 1999 spring and seep survey, it was unclear as to what the boundaries of the survey area were and the locations of the seeps and springs that were identified. The current amendment provides the entire seep and spring survey including the whole study area map. The information is presented in Appendix 7-6A.

Appendix 7-5, Water Rights Summary, has been updated to reflect the water rights within the proposed expansion area. Additionally, Map 7-3, Water Rights, has been revised to depict the water rights. Two point-to-point surface water rights are located on the Right Fork of Whitmore Canyon (91-2038 and 91-3519).

**ENVIRONMENTAL RESOURCES INFORMATION**

March 23, 2011

**Probable Hydrologic Consequences Determination**

The application meets the Probable Hydrologic Consequences Determination of the State of Utah R645-Coal Mining Rules.

The Permittee discusses the potential for impacts to the Grassy Trail Reservoir beginning on page 7-24. The Division approved a mine plan revision in 2005 that allowed longwall mining to occur directly adjacent to the Grassy Trail Reservoir. Panel #7 was the closest in proximity to Grassy Trail Reservoir (completed mining in September 2006). Based upon the information submitted by RB&G consultants, there was no mining related damage to the dam as result of the full extraction of Panel #7. The integrity of the earthen structure of the dam was maintained.

Following the completion of Panel #7, the longwall was moved approximately 2 miles to the west. As a result of the significant amount of overburden in this area, a panel/barrier longwall mining method was initiated at that time. The panel/barrier system leaves a 400' wide barrier pillar between each longwall panel which greatly reduced the magnitude and frequency of mining-related seismic events. The proposed mining block in this application will be more than three times further away from the dam than Panel #7 and will utilize a panel/barrier configuration. As a result, the potential for impacts to the Grassy Trail Reservoir are minimal.

The potential impacts to surface water resources are minimal as well. A barrier pillar of coal is located directly below the Left Fork of Whitmore Canyon (See Map 5-7, Subsidence map). No planned subsidence will occur on the Right Fork of Whitmore Canyon. Development mining only will occur below the Right Fork drainage. The amount of overburden in the area of the Right Fork of Whitmore Canyon ranges from 2,500-3,000' below grade. As a result of this extensive cover, the potential for impacts to this drainage are considered minimal.

**Findings:**

The application meets the Hydrologic Information requirements of the State of Utah R645-Coal Mining Rules.

## **OPERATION PLAN**

### **PROTECTION OF PUBLIC PARKS AND HISTORIC PLACES**

Regulatory Reference: 30 CFR 784.17; R645-301-411.

#### **Analysis:**

In cultural resource report SPUT-606, site 42CB-317 located within the SW/SW/SW of Section 6 was considered eligible pending re-examination by Senco-Phenix. The site consists of a series of nine historic house structures with associated outhouses, corrals and fences on the west side of Whitmore Creek. No eligibility recommendation was previously made. As explained in the historic and cultural resource information section above, John senulis and Dave Shaver have committed to further evaluating this site to determine if it exists and its location. If eligible, and located in an impact area, the application must include a description of the measures to be used to prevent adverse impacts from undermining.

#### **Findings:**

The information provided is considered adequate to meet the minimum regulatory requirements for this section. Prior to undermining, the permittee submit information clarifying site 42CB-317 to the Division. At which time, the Division will make a determination if further inventory is and a protection plan is necessary.

### **SUBSIDENCE CONTROL PLAN**

Regulatory Reference: 30 CFR 784.20, 817.121, 817.122; R645-301-521, -301-525, -301-724.

#### **Analysis:**

In its subsidence control plan (pg 5-26), the applicant commits to adopt measures which are technologically and economically feasible to prevent subsidence under areas to be protected and to provide for planned controlled subsidence in all other areas. All material damage will be corrected to the extent technologically and economically feasible.

The Grassy Trail Reservoir, which impounds more than 20 acre-feet of water, is located within and adjacent to the permit area. Plans are in place to the reservoir to be moved and

reconstructed so as to allow for mining to take place within the Penta Creek Extension. A previously mined panel, 7, is the closest longwall panel to Grassy Trail Reservoir, located approximately 995' from the reservoir measured horizontally. The panel is also 1664' below the reservoir.

West Ridge Resources contracted with RB&G Engineering to prepare a study of the risk to Grassy Trail reservoir from seismicity and subsidence associated with longwall mining in the West Ridge Mine. The study involved the collection of additional data from newly-installed accelerometers, subsidence monitoring stations, and piezometers in the area around the dam. Another phase of the study was done for compliance with the regulatory requirements of the Utah Division of Dam Safety. Appendix 5-11 of the application is the Grassy Trail Dam & Reservoir Mining – Induced Seismicity Report. Appendix 5-12 is the Grassy Trail Dam & Reservoir, Phase II Dam Safety Study.

The seismicity report addressed the issues of dam stability analysis, subsidence, internal erosion potential, reservoir seepage and landslide potential. The report concluded that it is unlikely that the anticipated mining induced seismicity will impact the performance of the dam and reservoir.

Based on the approval of the mine plan concerning the full extraction of panel #7, the panel was extracted in December of 2005. Extraction closest to the Grassy Trail Reservoir occurred in March of 2006. Based on recommendation from the RB&G Study, a monitoring program was put in place and flowed throughout the process of mining panel #7. The monitoring system included:

- Bi-weekly site inspection to observe embankment crest and slope stability. Cracking, ground deformation, and seepage were also monitored.
- Monthly measurements of ground and water motion devices.
- Annual surveys of control points on the embankment and landslide areas
- Daily monitoring of the UUSS list of recent seismic events. Daily records were to be maintained. Events of interest would be properly reported within 24 hours of the event.
- Site inspection reports must be submitted to RB&G Engineering and the Utah Division of Dam Safety within 24 hours. Daily monitoring reports submitted monthly.

Monitoring, as described above, was conducted during the mining of panel #7. As expected, there was no mining related damage to the dam, although some "slumpage" of an adjacent hillside was observed, which resulted in minor movement of the west abutment of the dam. The applicant states that there was no loss of integrity of the earthen structure of the dam.

The applicant commits to a similar but more complete and more frequent monitoring will be conducted for Block 18-20.

In January of 2008, RB&G prepared a post mining Summary Report of the mining induced seismicity. This report is included within the Appendix 5-16 of the application. Monitoring of the dam continued after mining of panel #7 was complete. In September 2010, RB&G Engineering prepared a summary report of the subsequent mining induced seismicity. The report is included with the application in Appendix 5-17.

As part of the mining process, the applicant has implemented a panel-barrier mining design that leaves a 400' wide barrier between each longwall panel. This design was not in place during the mining of panel #7. This system will be used during the mining of panels 18, 19, and 20 (the extension panels). The closest mining from Block 18-20 will be more than 3000' feet away from the dam horizontally and will be 2200' feet below the dam.

The Subsidence Control Map (5-7) shows a future subsidence monitoring station between Block 18-10 and the Grassy Trail Reservoir.

**Findings:**

Contents and information provided are sufficient to meet the minimum requirements of this section of the Utah Coal Mining Rules.

## **MAPS, PLANS, AND CROSS SECTIONS OF MINING OPERATIONS**

Regulatory Reference: 30 CFR Sec. 784.23; R645-301-512, -301-521, -301-542, -301-632, -301-731, -302-323.

**Analysis:**

The application included maps that need to be updated within the MRP. The maps include: Permit Area (1-0), Location (1-1), Regional Soil (2-1), Vegetation (3-1), Wildlife-Raptor (3-4A), Wildlife-Deer (3-4B), Wildlife-Elk (3-4C), Wildlife-Antelope (3-4D), Existing Land Use (4-1), Surface Ownership (5-2), Sub-surface ownership (5-3), Mining Projections (5-4A), Extended Projections (5-4B), Subsidence (5-7), Regional Geology (6-1), Coal Seam Structure (6-2), Coal Seam Isopach (6-3), Water Rights (7-3), Seeps/Springs (7-5), Hydrologic Monitoring (7-6), Operational Monitoring (7-7).

All applicable maps were properly certified.

**Findings:**

Contents and information provided are sufficient to meet the minimum requirements of this section of the Utah Coal Mining Rules.

## **HYDROLOGIC INFORMATION**

Regulatory Reference: 30 CFR Sec. 773.17, 774.13, 784.14, 784.16, 784.29, 817.41, 817.42, 817.43, 817.45, 817.49, 817.56, 817.57; R645-300-140, -300-141, -300-142, -300-143, -300-144, -300-145, -300-146, -300-147, -300-147, -300-148, -301-512, -301-514, -301-521, -301-531, -301-532, -301-533, -301-536, -301-542, -301-720, -301-731, -301-732, -301-733, -301-742, -301-743, -301-750, -301-761, -301-764.

### **Analysis:**

#### **Surface-Water Monitoring Plan**

The application meets the Surface-Water Monitoring Plan requirements of the State of Utah R645-Coal Mining Rules.

The previous technical analysis had identified a deficiency relative to the surface water monitoring plan. The Permittee was directed to establish a surface water monitoring point on the Right Fork of Whitmore Canyon in order to collect pre-mining baseline and operational data for this drainage.

Sample point RST-1 was established the 3<sup>rd</sup> quarter of 2010. The site is located on the Right Fork of Whitmore Canyon above Grassy Trail Reservoir. Additionally, on page 7-41, the Permittee discusses Grassy Trail flumes LF-1 and RF-1. Flumes are currently located on both the Left and Right Forks of Whitmore Canyon. However, the flumes require maintenance/repair work before they can be utilized for data collection. The Permittee commits to reconstructing the flumes during the 2011 construction season. Once the flumes become operational, continuous flow monitors will be installed. The flow data will be submitted to the Division on a quarterly basis.

Table 7-1, Hydrologic Monitoring Protocols and Locations has been revised to reflect the addition of surface water monitoring sites RST-1, LF-1 and RF-1. Additionally, Map 7-7, *Operational Monitoring Locations*, has been revised to depict surface water monitoring locations RST-1, LF-1 and RF-1.

#### **Stream Buffer Zones**

The application meets the Stream Buffer Zone requirements of the State of Utah R645-Coal Mining Rules.

No subsidence is planned along the Left and Right forks of Whitmore Canyon. The mine projections depicted on Map 5-4A, Mining Projections shows a barrier pillar directly underneath

the Left Fork of Whitmore Canyon. Mine development will occur beneath the Right Fork of Whitmore Canyon but not longwall coal extraction.

### **Impoundments**

The application meets the Impoundment requirements of the State of Utah R645-Coal Mining Rules.

The proposed lease expansion outlines the full extraction of longwall panels 18-20. The panels are located approximately 3,000' away from the Grassy Trail dam and approximately 2,220' lower than the reservoir. The panels are located more than three times further away from the dam than the longwall mining that occurred on panel #7 in March of 2006. The full extraction of panel #7 was the closest point of mining activity to the Grassy Trail Reservoir. Monitoring of the Grassy Trail Reservoir dam was conducted continuously before, during and after the mining of panel #7. Based upon the seismicity data collected by RB&G Engineering (See Appendix 5-16), there was no mining related damage to the dam.

In September 2010, RB&G Engineering prepared a summary report of the subsequent mining-induced seismicity adjacent to Grassy Trail Reservoir from January 2008 – July 2010 (See Appendix 5-17). The report concludes that it's apparent that "mining activity in the West Ridge Mine have caused mining-induced seismic events, and that ground motions caused by these events are detectable at Grassy Trail Dam and Reservoir." However; the report indicates that the ground motions caused by the mining have not impaired the function or performance of the Grassy Trail dam, *"Despite the recorded deformations, the dam appears to be performing well, and ongoing deformations have been very small to negligible since mining of Panel 7 concluded in the fall of 2006"*. The RB&G report further recommends that continued monitoring of seismic movement at the dam continue.

Additionally, the longwall mining method for the proposed lease expansion will be a panel/barrier/panel design due to the depth of cover in the area. The panel/barrier/panel configuration produces dramatically less seismic movement as a result of subsidence associated longwall mining.

On February 24<sup>th</sup>, 2011, a meeting of stakeholders occurred at the Department of Natural Resources Price, UT field office. Representatives from RB&G Engineering provided an overview of the seismicity monitoring and resulting land movement that has occurred as a result of mining in the area of the Grassy Trail Reservoir. During the presentation, Bret Dixon from the Utah Division of Dam Safety raised an issue with data collected from one of the monitoring piezometers located within the Grassy Trail dam. Mr. Dixon was concerned that data obtained from Piezometer 12 had inexplicably exhibited a significant drop in elevation beginning in the early summer of 2010. Following the sharp reduction in elevation, the water levels obtained in



Piezometer 12 remained low until the present. Representatives from RB&G Engineering as well as representatives from the City of East Carbon indicated that they were aware of the reduction in elevation readings in the piezometer and that they would investigate what the possible causes were.

On March 16<sup>th</sup>, 2011, Michael Hansen from RB&G Engineering sent out an e-mail outlining the investigation into the anomalous readings at Piezometer 12. Mr. Hansen indicated that following the installation of the piezometer, a water level indicator could only be dropped to 72' rather than the 85' depth. Mr. Hansen indicated that he believed that there was a partial blockage at 72' and that the water was able to rise through it.

On March 9<sup>th</sup>, 2011, RB&G Engineering met with Burt Krause (City of East Carbon City) at the site. They were unable to get the water probe down to the 84' level that had been reported during the past months. The following day, an air probe was inserted into the piezometer and compressed air was forced down into the hole. They were successful in removing the blockage and opening the hole down to the bottom of the piezometer (85').

Division of Oil, Gas and Mining representative Steve Christensen discussed the data issue at Piezometer 12 with Mr. Bret Dixon of Dam Safety. Mr. Dixon had discussed the situation at Piezometer 12 with RB&G and although no satisfactory answer could be obtained as to why there was such a sharp reduction in water level, Mr. Dixon was pleased that RB&G was once again involved with the data collection and monitoring at the Grassy Trail Reservoir. Continued monitoring of all piezometers and seismic equipment will continue.

### **Findings:**

The application meets the Hydrologic Information requirements of the State of Utah R645-Coal Mining Rules.

## **RECLAMATION PLAN**

### **HYDROLOGIC INFORMATION**

Regulatory Reference: 30 CFR Sec. 784.14, 784.29, 817.41, 817.42, 817.43, 817.45, 817.49, 817.56, 817.57; R645-301-512, -301-513, -301-514, -301-515, -301-532, -301-533, -301-542, -301-723, -301-724, -301-725, -301-726, -301-728, -301-729, -301-731, -301-733, -301-742, -301-743, -301-750, -301-751, -301-760, -301-761.

#### **Analysis:**

##### **Hydrologic Reclamation Plan**

The amendment meets the Hydrologic Reclamation Plan requirements of the State of Utah R645-Coal Mining Rules.

No additional surface disturbance is planned with the proposed IBC. As a result, the Hydrologic Reclamation Plan requirements do not require revisions at this time.

#### **Findings:**

The amendment meets the Hydrologic Reclamation Plan requirements of the State of Utah R645-Coal Mining Rules.

## **CUMULATIVE HYDROLOGIC IMPACT ASSESSMENT**

Regulatory Reference: 30 CFR Sec. 784.14; R645-301-730.

#### **Analysis:**

The amendment meets the Cumulative Hydrologic Impact Assessment (CHIA) requirements of the State of Utah R645-Coal Mining Rules.

The proposed expansion areas are within the existing CHIA and has been evaluated for potential mining induced impacts to the hydrologic balance within the cumulative impact area.

#### **Findings:**

The amendment meets the Cumulative Hydrologic Impact Assessment (CHIA) requirements of the State of Utah R645-Coal Mining Rules.

## **RECLAMATION PLAN**

### **HYDROLOGIC INFORMATION**

Regulatory Reference: 30 CFR Sec. 784.14, 784.29, 817.41, 817.42, 817.43, 817.45, 817.49, 817.56, 817.57; R645-301-512, -301-513, -301-514, -301-515, -301-532, -301-533, -301-542, -301-723, -301-724, -301-725, -301-726, -301-728, -301-729, -301-731, -301-733, -301-742, -301-743, -301-750, -301-751, -301-760, -301-761.

#### **Analysis:**

##### **Hydrologic Reclamation Plan**

The amendment meets the Hydrologic Reclamation Plan requirements of the State of Utah R645-Coal Mining Rules.

No additional surface disturbance is planned with the proposed IBC. As a result, the Hydrologic Reclamation Plan requirements do not require revisions at this time.

#### **Findings:**

The amendment meets the Hydrologic Reclamation Plan requirements of the State of Utah R645-Coal Mining Rules.

## **CUMULATIVE HYDROLOGIC IMPACT ASSESSMENT**

Regulatory Reference: 30 CFR Sec. 784.14; R645-301-730.

#### **Analysis:**

The amendment meets the Cumulative Hydrologic Impact Assessment (CHIA) requirements of the State of Utah R645-Coal Mining Rules.

The proposed expansion areas are within the existing CHIA and have been evaluated for potential mining induced impacts to the hydrologic balance within the cumulative impact area.

#### **Findings:**

The amendment meets the Cumulative Hydrologic Impact Assessment (CHIA) requirements of the State of Utah R645-Coal Mining Rules.